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December 12, 2000

Ms. Magalie Roman Salas, Secretary
Federal Communications Commission
445 Twelfth Street, S. W. -- Room TWB-204
Washington, D. C. 20554

Re: *Ex Parte*, CC Docket No. 98-147, Deployment of Wireline Services Offering Advanced Telecommunications Capability; CC Docket No. 96-98, Implementation of the Local Competition Provisions in the Telecommunications Act of 1996

Dear Ms. Roman Salas:

On Tuesday, December 11, 2000, Richard Rubin, C. Michael Pfau and the undersigned, all of AT&T, and Richard Young of Sidley and Austin, representing AT&T, met with the following members of the Commission's Common Carrier Bureau and the Office of Engineering and Technology: Brent Olsen, Johanna Mikes, William Kehoe III, Staci Pies, Dennis Johnson, Kimberly Cook, Aaron Goldberger, Shanti Gupta, and Paul Marrangoni. The purpose of the meeting was to discuss AT&T's previously filed reply comments in the above-captioned proceedings. The attached presentation was used to facilitate our discussion. In addition, AT&T provided each member of the FCC staff with a copy of the attached Collocation White paper.

Two copies of this Notice are being submitted to the Secretary of the FCC in accordance with Section 1.1206(a)(2) of the Commission's rules.

Sincerely,

ATTACHMENTS

cc: K. Cook
A. Goldberger
S. Gupta
D. Johnson
W. Kehoe III
P. Marrangoni
J. Mikes
B. Olsen
S. Pies

Access to the Entire Loop- A Competitive Imperative

AT&T Presentation to the FCC

December 12, 2000

5th FNPRM
Reaffirmation of UNE Loop Policy

- The Commission's UNE loop policy is straightforward and essential to support competition
  - The loop was -- and is -- the quintessential monopoly bottleneck. This is equally true in a remote terminal/next-generation architecture.
  - Competitive LECs are entitled to access an unbundled loop element that consists of all features, functions, and capabilities that provide transmission functionality between a customer's premises and the central office, regardless of the technologies used to provide, or the services offered over, such facilities.
  - This has been the law and the Commission's policy from the *Local Competition Order* to the present; the Commission has never wavered on this critical issue.
  - Without access to customers' loops from end to end, effective local competition is impossible.

5th FNPRM
Reaffirmation of UNE Loop Policy

- An unbroken line of Commission precedents rejects the ILECs' claims that a network element must be defined as a physical facility that constitutes a complete unit of equipment
  - "We adopt the concept of unbundled elements as physical facilities of the network, together with the features, functions, and capabilities associated with those facilities." (*Local Competition Order* ("*LCO*"), ¶ 258)
  - "[S]ection 251 (c)(3) requires incumbent LECs to provide requesting carriers with all of the functionalities of a particular element, so that requesting carriers can provide any telecommunications services that can be offered by means of the element." (*LCO* ¶ 292).
  - "The definition of a network element is not limited to facilities, but includes features functions, and capabilities as well." (*UNE Remand Order* ¶ 175)

5th FNPRM
Reaffirmation of UNE Loop Policy

- Nothing about next-generation loop architecture affects CLECs' right (or their compelling need) to access the entire loop as an unbundled element at the central office
  - "The local loop network element is defined as a transmission facility *between a distribution frame (or its equivalent) in an incumbent LEC central office* and an end-user customer premises." 47 C.F.R. § 319(a) (emphasis added); *see also UNE Remand Order* ¶ 166; LCO ¶ 380
  - An ILEC's deployment of a different technology to provide transmission between the customer premises and the ILEC central office does not change the essential functionality of the equipment that is deployed.

5th FNPRM
Reaffirmation of UNE Loop Policy

- The Commission has already made clear that ILECs must unbundle loops of a wide variety, regardless of the technologies used to provide, or the services offered over, such facilities
  - "We conclude that LECs must provide access to unbundled loops, including high-capacity loops, nationwide. We find that requesting carriers are impaired without access to loops and that loops include high-capacity lines, dark fiber, line conditioning, and certain inside wire." (*UNE Remand Order* ¶ 165)
  - "The incumbent LECs' obligation to provide requesting carriers with fully functional conditioned loops extends to loops provisioned through remote concentration devices such as digital loop carriers (DLCs)." (*Advanced Services Order* ¶ 54)

5th FNPRM
Reaffirmation of UNE Loop Policy

- CLECs are seriously impaired without access to unbundled loops capable of delivering both voice and high speed data transmissions where NGDLC technology is employed
  - It is practically and economically impossible to duplicate the ILECs' outside plant facilities, including NGDLC plant.
  - NGDLC plant provides ILECs with efficiencies and cost savings, making duplication of NGDLC plant even less possible for CLECs.
  - Remote collocation is typically unavailable to CLECs and in virtually all cases is technically and economically infeasible.

5th FNPRM
Reaffirmation of UNE Loop Policy

- ILEC claims that the Commission must conduct a separate "necessary and impair" test for each piece of electronics to their loop plant is inconsistent with the Commission's prior rulings and would make it impossible for Commission rules to keep pace with developing technology
  - In theory, each "new" piece of electronics – possibly down to manufacturer and model – would have to be individually authorized as a separate UNE.
  - If such new electronics were defined as a separate UNE, each permutation and equipment combination using that equipment would likely be challenged by ILECs.
  - Such a ruling would balkanize the ILEC loop element and deny CLECs access to critical loop transmission functionality; even where such access was obtained, it would likely be limited to equipment items that rapidly become obsolete.
  - Technological developments would constantly outstrip the Commission's rules.

5th FNPRM
Close the Advanced Services Loophole for Loops

- The current language exempting packet switching from unbundling was *not* designed to frustrate CLECs' access to unbundled loops that are essential to accessing customers' high-speed data signals necessary to provide advanced services. In fact, the Commission *assumed* such access would be available when it decided not to unbundle packet switching.
- ILEC reply comments make clear that they intend to twist the current wording of Section 51.319(c)(5) – which was intended to *promote* competition -- to circumvent pro-competitive unbundling.

5th FNPRM
Close the Advanced Services Loophole for Loops

- ILECs have claimed (or appear ready to claim):
  - CLECs can use the copper distribution to provide service of equivalent quality (thereby asserting compliance with 51.319 (c)(5)(B)(ii))
  - ILECs have not foreclosed a CLEC from collocating in the RT when space is available or when CLECs may utilize adjacent collocation alternatives (thereby asserting compliance with 51.319 (c)(5)(B) (iii))
  - The ILEC data affiliate, and not the ILEC, has deployed the "packet switching" equipment at the RT (thereby asserting compliance with 51.319 (c)(5)(B) (iv))
- Prevailing on any one of the arguments could nullify CLEC access to "packet switch" unbundling and thereby – according to the ILECs – deny CLECs access to unbundled loops provided through the use of NGDLC technology.
- The current wording of Section 51.319 (c)(5) will, at a minimum, enable ILECs to significantly dampen CLECs' ability to utilize the NG loop plant by subjecting CLECs to needless litigation.

5th FNPRM
Close the Advanced Services Loophole for Loops

- Consistent with the current loop definition, the Commission should clarify that, for a loop provided using NGDLC technology, the voice portion of the loop ends at the cross-connect frame appearance of the Central Office Terminal (COT) and the data portion of the loop ends at the cross-connection frame appearance of the CLEC's port on the Optical Concentration Device (OCD or equivalent)
- The recommended clarification will provide CLECs with necessary access to unbundled loops in support of advanced telecommunications services on a technology-neutral and service-neutral basis, without requiring that ILECs unbundle DSLAMs deployed in the central office.

5th FNPRM
ILEC Arguments Against Unbundling Loops Provided Over NGDLC Lacks Merit

- Contrary to ILEC assertions, unbundling loops provided over NGDLC will not have any of the dire effects projected
  - ILECs will *not* be deterred from investing in NGDLC- ILECs have publicly committed to invest in NGDLC/DSL, both because customers want it and because the ILECs expect huge cost savings as a result.
  - ILEC investment risk is *not* increased but reduced – Demand is more straightforward to anticipate when virtually all advanced services industry participants seek to use the ILEC's loop facilities.
  - Advanced service deployment will *not* be slowed; it will be accelerated and service diversity will be increased - Unbundling will make customers more readily accessible to all advanced service providers, many of which will have unique market strategies and different service offerings.
  - Regulation is *not* more pervasive - Changes in ILEC outside plant do not alter the simple facts that a loop is a loop and that loop unbundling is not "new regulation."
  - Regulation of retail advanced services is *not* implicated - Action that ensures access to the ILECs' underlying infrastructure is distinct from regulating retail services. No limitations are placed upon service providers' uses of the loop to provide any service that is technically feasible.

Collocation

Presentation to the FCC
December 12, 2000

D.C. Circuit Remand

THE D.C. CIRCUIT COURT *DID NOT* ATTEMPT TO IMPLEMENT SECTION 251(c)(6), BUT LEFT THAT TO THE COMMISSION ON REMAND

- COURT EXPRESSLY HELD THAT "NECESSARY" UNDER SECTION 251(c)(6) IS AMBIGUOUS, STATING THAT "[I]T IS EQUALLY CLEAR THAT, GIVEN THE COMPLEXITY OF THE TASK AT HAND, ANY SEARCH FOR 'PLAIN MEANING' IN THE STATUTE IS FRUITLESS." *GTE SeRvice Corp. v. FCC,* 205 F.3d 416 (D.C. Cir. 1999)

- THE COURT HELD MERELY THAT THE INTERPRETATION THE COMMISSION HAD CHOSEN (i.e. "NECESSARY" MEANS "USED AND USEFUL") WAS NOT PERMISSIBLE

THEREFORE, CONTRARY TO ILEC CLAIMS, THE COURT DID NOT FIND THAT PARTICULAR TELECOMMUNICATIONS FUNCTIONALITIES CANNOT BE COLLOCATED NOR DID IT DICTATE A PARTICULAR RESULT ON REMAND

Definition of "Necessary"

COLLOCATION OF EQUIPMENT THAT PERFORMS A PARTICULAR TELECOMMUNICATIONS FUNCTIONALITY IS "NECESSARY" AT A MINIMUM, IF, WITHOUT THE RIGHT TO COLLOCATE SUCH EQUIPMENT:

- THE COSTS OF PROVIDING SERVICE WOULD INCREASE TO THE POINT THAT, IN A SIGNIFICANT NUMBER OF CASES, CLECs WOULD NOT OFFER THAT SERVICE, OR

- CLECs WOULD BE UNABLE TO OFFER SERVICE THROUGH INTERCONNECTION OR UNEs THAT HAVE THE SAME QUALITY AS THE INCUMBENT'S OFFERING

WHEN THE ABILITY TO PROVIDE SERVICE WOULD OTHERWISE BE PRECLUDED IN A SIGNIFICANT NUMBER OF CASES, COLLOCATION IS INDISPUTABLY "NECESSARY," "REQUIRED," OR "INDISPENSIBLE" FOR INTERCONNECTION OR ACCESS TO UNBUNDLED NETWORK ELEMENTS

Definition of "Necessary"

AT&T'S PROPOSED DEFINITION:

- ESTABLISHES A CLEAR LIMITING PRINCIPLE AND ACCORDS WITH THE "ORDINARY AND FAIR MEANING" AND PURPOSE OF THE STATUTE

- IS ESSENTIALLY THE SAME DEFINITION THE COMMISSION GAVE TO THE TERM "NECESSARY" IN SECTION 251(d)(2) IN THE *UNE Remand Order*

NECESSARY ACCESS AND INTERCONNECTION

EQUIPMENT IS "NECESSARY" FOR "ACCESS TO UNEs" WHEN, ABSENT COLLOCATION, THE NEW ENTRANT WOULD NOT BE ABLE TO PROVIDE SOME SERVICES TO SERVE SOME CUSTOMERS BY MAKING USE OF ANY OR ALL OF THE FEATURES OR FUNCTIONALITIES OF AN ELEMENT

UNDER SECTION 251(c)(2), INCUMBENTS MUST PROVIDE INTERCONNECTION THAT IS "EQUAL IN QUALITY" TO WHAT IT PROVIDES ITSELF

- THE STATUTORY REQUIREMENT OF EQUAL-IN-QUALITY INTERCONNECTION CANNOT BE DIVORCED FROM THE COLLOCATION PROVISION

- COLLOCATION IS "NECESSARY" FOR INTERCONNECTION WHEN, ABSENT COLLOCATION, THE NEW ENTRANT WOULD NOT BE ABLE TO ACHIEVE INTERCONNECTION THAT ENABLES IT TO PROVIDE SERVICE THAT IS EQUAL IN QUALITY TO WHAT THE INCUMBENT PROVIDES TO ITSELF

Multi- Function Equipment

WHERE EQUIPMENT HAS FUNCTIONALITIES AND CAPABILITIES THAT MEET THE NECESSARY STANDARD, COLLOCATORS MUST BE PERMITTED TO USE SUCH EQUIPMENT, REGARDLESS OF WHETHER IT PERFORMS ADDITIONAL TELECOMMUNICATIONS FUNCTIONS, *SO LONG AS THE ADDITIONAL FUNCTIONS DO NOT CONSUME ANY APPRECIABLE ADDITIONAL SPACE*

- STATUTORY PROSCRIPTIONS AGAINST "UNDUE" OR "UNREASONABLE" DISCRIMINATION, LIKE THOSE IN SECTION 251(d)(6), COMPREHEND *EVERY* FORM OF UNREASONABLE DISCRIMINATION WITHIN THE POWER OF CONGRESS TO CONDEMN. *Merchants Warehouse Co. v. United States*, 283 U.S. 501, 512 (1931)

THIS READING OF THE STATUTE IS ENTIRELY APPROPRIATE BECAUSE, WHERE THE ADDITIONAL FUNCTIONS MAKE NO ADDITIONAL *SPACE* DEMANDS, THE INCUMBENT HAS NO LEGITIMATE CONCERN UNDER THE TAKINGS CLAUSE

CONTRARY TO SBC'S ASSERTIONS, ANY "DESTRUCTION" OF THE INCUMBENT'S RIGHT TO USE THE PROPERTY PLAINLY STEMS *NOT* FROM ADDITIONAL FUNCTIONALITIES BUT FROM THE COLLOCATION OF THE EQUIPMENT ITSELF

Alleged Recreation of the Central Office

CONTRARY TO THE ILECS' CLAIM, AT&T'S PROPOSED STANDARD DOES NOT PERMIT COLLOCATORS TO RECREATE THE ILEC's CENTRAL OFFICE WITHOUT RESTRICTIONS

- SECTION 251(c)(6) PROHIBITS INCUMBENTS FROM IMPOSING UNREASONABLE AND DISCRIMINATORY TERMS AND CONDITIONS ONLY ON THOSE COLLOCATIONS *THAT DO NOT IMPLICATE THE ILECs' RIGHTS UNDER THE TAKINGS CLAUSE*

- A COLLOCATOR MAY USE ADDITIONAL NON-NECESSARY FUNCTIONS ONLY WHEN THEY ARE INTEGRATED WITHIN EQUIPMENT THAT PERFORMS "NECESSARY" FUNCTIONS AND CONSUMES NO APPRECIABLE ADDITIONAL SPACE

THE STANDARD PRECLUDES COLLOCATION OF EQUIPMENT THAT SUPPORTS OS/DA AND SIGNALING FUNCTIONS AND ENHANCED SERVICES PLATFORMS

THE STANDARD REQUIRES COLLOCATION OF SURVEILLANCE FUNCTIONS ASSOCIATED WITH TRANSMISSION AND SWITCHING EQUIPMENT THAT PERMIT COLLOCATORS TO MONITOR THE PERFORMANCE OF SUCH EQUIPMENT

Transmission Functions

COLLOCATION OF TRANSMISSION FUNCTIONS MEETS THE "NECESSARY FOR INTERCONNECTION AND ACCESS TO UNE" STANDARDS

- EQUIPMENT PERFORMING TRANSMISSION FUNCTIONS IS "NECESSARY" FOR INTERCONNECTION AND ACCESS TO UNEs BECAUSE THE ONLY AVAILABLE ALTERNATIVE IS TO DEPLOY PROHIBITIVELY EXPENSIVE INTEROFFICE TRANSPORT FACILITIES
  - CLECs WOULD BE FORCED TO RELY ON COPPER PAIRS FOR INTEROFFICE TRANSPORT, PRECLUDING ENTRY
  - CLECs WOULD BE PRECLUDED FROM USING THE FEATURES, FUNCTIONS AND CAPABILITIES OF THE UNBUNDLED LOOP THAT PERMIT DSL SERVICES

Packet Switching

COLLOCATION OF PACKET SWITCHING FUNCTIONS MEETS THE "NECESSARY FOR INTERCONNECTION AND ACCESS TO UNE" STANDARDS

- PACKET SWITCHES PERFORM CRITICAL TRANSMISSION FUNCTIONS THAT ENABLE OPTIMAL USE OF TRANSPORT MEDIA

- PACKET SWITCHES INCREASE THE EFFICIENCY OF THE CLEC's TRANSMISSION FACILITIES

- THE COMMISSION'S DECISION NOT TO REQUIRE UNBUNDLING OF PACKET SWITCHING WAS BASED ON IT'S FINDING THAT NEW ENTRANTS WERE ABLE TO SELF-PROVIDE THIS FUNCTIONALITY THROUGH COLLOCATION

Circuit Switching Functions

COLLOCATION OF CIRCUIT SWITCHING FUNCTIONS MEETS THE NECESSARY FOR INTERCONNECTION AND ACCESS TO UNE STANDARDS

- CIRCUIT SWITCH EQUIPMENT INTEGRATES SWITCHING AND TRANSMISSION FUNCTIONS IN RELATIVELY SMALL EQUIPMENT THAT FITS INTO A STANDARD COLLOCATION CAGE

- LIKE PACKET SWITCHES, CIRCUIT SWITCH EQUIPMENT PERFORMS MULTIPLEXING AND CONCENTRATION FUNCTIONS

- MODERN SWITCHING EQUIPMENT, SUCH AS A SINGLE REMOTE SWITCHING MODULE, CAN REPLACE MULTIPLE DLCs IN THE SAME FOOTPRINT AS THE DLCs IT IS REPLACING

Circuit Switching Functions

CIRCUIT SWITCHING FUNCTIONALITY MEETS THE NECESSARY TEST ONLY:

- WHEN "NECESSARY" TO ACCOMPLISH A MATERIAL INCREASE IN THE EFFICIENCY OF THE TRANSMISSION, OR

- WHEN CIRCUIT SWITCHING FUNCTIONALITY IS AN ADDITIONAL FUNCTION OF A PIECE OF EQUIPMENT THAT ALREADY MEETS THE "NECESSARY" TEST

Cross-Connects

CLEC PROVIDED CROSS-CONNECTS ARE ALSO "NECESSARY" FOR ACCESS TO AN UNBUNDLED LOOP SHARED BY TWO CLECs THAT PROVIDE DIFFERENT SERVICES, AS IN LINE SPLITTING

- THE COMMISSION'S RULES REQUIRE THAT ILECs PROVIDE ACCESS TO UNBUNDLED LOOPS IN A MANNER THAT ALLOWS THE REQUESTING CARRIER "TO PROVIDE *ANY* TELECOMMUNICATIONS SERVICE THAT CAN BE OFFERED BY MEANS OF THAT ELEMENT." *Texas 271 Order*

- WITHOUT CROSS-CONNECTS BETWEEN CLEC COLLOCATIONS, LINE SPLITTING BETWEEN TWO FACILITIES-BASED CARRIERS WOULD BE INFEASIBLE

- THE ONLY ALTERNATIVE WOULD BE TO EXTEND COPPER TRANSMISSION FACILITIES TO A DIFFERENT LOCATION, ELIMINATING THE ABILITY TO USE THE FULL FEATURES AND CAPABILITIES OF THE LOOP

PHYSICAL COLLOCATION WHITE PAPER
DECEMBER 12, 2000

In their comments and reply comments, SBC, Verizon, and BellSouth (the "LECs") respond to the D.C. Circuit's narrow remand in *GTE Service Corp.* v. *FCC*, 205 F.3d 416 (D.C. Cir. 2000), by launching an all-out assault on Section 251(c)(6) and competitors' statutory right to collocate equipment "necessary" for interconnection and access to unbundled network elements. In particular, these LECs attempt to short-circuit the entire inquiry on remand by insisting, erroneously, that the Court has already held that particular telecommunications functionalities cannot be collocated under any interpretation of Section 251(c)(6). In addition, SBC mounts an extended attack on AT&T's analysis of the statute and its factual showings that incumbents must permit competitors to collocate transmission and switching and associated functionalities. SBC Reply at 4-18. The Commission should reject these claims, because they rest largely on distortions of both the Court's opinion and AT&T's comments.

To begin with, contrary to the LECs' assertions, the Court did *not* dictate any particular result on remand. Despite the LECs' repeated references to the "plain language" of Section 251(c)(6), the Court expressly held that the term "necessary" in that section is ambiguous. *GTE Service Corp.*, 205 F.3d at 421 ("[i]t is equally clear that, given the complexity of the task at hand, any search for 'plain meaning' in the statute is fruitless," including the term "necessary"). Accordingly, the Commission's interpretation of the term is entitled to judicial deference. Indeed, the Court explicitly recognized that there is more than one permissible interpretation of the statute and multiple ways to implement the Act's collocation requirements. The Court did not (and indeed could not) attempt to perform the "complex[] task" of implementing Section 251(c)(6) in the opinion; rather, it left that to the Commission on remand. The Court held merely that the interpretation the Commission had chosen (*i.e.*, "necessary" means "used and useful") was not among the permissible ones. The Commission's task on remand is to select an interpretation of Section 251(c)(6) that comports with the "ordinary and fair meaning of [the statute's] terms" and "the statutory purpose enunciated in [that section]." *See GTE Service Corp.*, 205 F.3d at 422, 424 (quoting *AT&T Corp.* v. *Iowa Utils. Bd.*, 525 U.S. 366, 390 (1999)). The Court made no attempt to make that choice for the Commission or to prejudge what functionalities or types of equipment would be subject to collocation under the Commission's standard on remand.

The Definition of "Necessary." AT&T has offered a definition of "necessary" that unquestionably comports with the Act:

> collocation of particular equipment that performs a particular telecommunications functionality is "necessary," at a minimum, if, without the right to collocate such equipment, (1) the cost of providing service would increase to the point that, in a significant number of cases, CLECs would not offer that service through interconnection or UNEs, or (2) CLECs would be unable to offer service through interconnection or UNEs that has the same quality as the incumbent's offering. *See* AT&T Comments at 14.

Although AT&T does not believe that the Commission must interpret Section 251(c)(6) that narrowly, the LECs cannot seriously object to such a construction since it is essentially the same

definition that the Commission gave to the term "necessary" in Section 251(d)(2) in the *UNE Remand Order*. *See Implementation of the Local Competition Provisions of the Telecommunication Act of 1996*, Third Report and Order ond Fourth Notice of Proposed Rulemaking, 15 FCC Rcd. 3696, ¶¶ 44-45 (1999) (*"UNE Remand Order"*); *see also* Verizon Comments at 4 (advocating the same standard).

As a result, SBC's claims that AT&T has read the term "necessary" out of the statute are nonsense. *See* SBC at 10-11. AT&T's proposed standard does not mean that incumbents must permit collocation of any "equipment for interconnection or access to unbundled network elements." Collocation would be permitted only where, absent collocation, the new entrant could not offer service in a significant number of cases through interconnection or unbundled elements or could not offer service at the same level of quality. When the ability to provide service would otherwise be precluded, SBC cannot seriously dispute that collocation is "necessary," "required," or "indispensable" for interconnection or access to unbundled network elements. Indeed, AT&T's proposed reading of Section 251(c)(6) establishes a clear limiting principle and clearly accords with the "ordinary and fair meaning" and the purpose of the statute.[1]

SBC similarly mischaracterizes AT&T's argument by insisting that AT&T's test turns purely on whether collocation results in some *de minimis* cost savings to the CLEC. *See* SBC Reply at 14-17; *GTE Service Corp.*, 205 F.3d at 424 (rejecting interpretation of the term "necessary" that relied solely on "presumed cost savings" to the new entrant). To be sure, as the Supreme Court and the D.C. Circuit have held, the "necessary" standard requires more than the "assumption that *any* increase in cost (or decrease in quality) imposed by a denial of [collocation] renders [collocation] 'necessary.'" *Iowa Utils. Bd.*, 525 U.S. at 389-390 (emphasis in original); *GTE Service Corp.*, 205 F.3d at 424. At some point, however, the inability to collocate causes CLECs' costs to increase to a level where the new entrant can no longer offer service in significant number of cases through interconnection or through unbundled elements. At that point collocation unquestionably becomes "necessary." Thus, while SBC is correct that a small amount of efficiency and cost savings, standing alone, cannot be the standard under Section 251(c)(6), efficiency and cost savings are not *irrelevant*, as SBC seems to argue. *See, e.g.*, SBC Reply at 16-17 & n.10.[2]

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[1] SBC's complaint (Reply at 9) that this standard would permit collocation whenever a single inefficient and poorly run competitor needed it is simply wrong. Indeed, the Commission rejected the same argument in the *UNE Remand* proceeding, stating: "we agree . . . that the Act is not calibrated to the performance of the company whose business plan allows it to rely the least on the incumbent LEC's network elements. The provisions of the 1996 Act do not contemplate that either the incumbent LEC or the regulator will determine whether a particular carrier is 'efficient.' Rather, the Act is designed to create a regulatory framework that requires incumbent LECs to make network elements subject to the unbundling requirements of section 251 available to *all* requesting carriers, . . . and allows the marketplace to determine ultimately which competitors thrive or survive." *UNE Remand Order* ¶ 53 (emphasis in original).

[2] To use the Supreme Court's analogy, cost savings are like the height of a ladder that one uses to change a light bulb. *See Iowa Utils. Bd.*, 525 U.S. at 390 n.11. Once the ladder is "tall enough to enable one to do the job, but without stretching one's arm to its full extension," any further

"Access" to Unbundled Network Elements and "Interconnection." Not only is AT&T's interpretation of "necessary" unassailable, so are its interpretations of the statutory terms "interconnection" and "access" to unbundled network elements. Indeed, SBC is simply wrong that AT&T has "expand[ed]" the meaning of those terms. SBC at 7. SBC cannot dispute that the Commission held in the *Local Competition Order* that "access" to unbundled elements means the ability to make full use of the features and functionalities of that element. *See Implementation of the Local Competition Provisions of the Telecommunication Act of 1996*, First Report and Order, 11 FCC Rcd. 15499, ¶ 268 (1996) (*"Local Competition Order"); see also Application by SBC et al. to Provide In-Region InterLATA Services in Texas*, CC Docket No. 00-65, 2000 WL 870853, ¶ 325 (Rel. June 30, 2000) (*"Texas 271 Order"*) . Thus, equipment is "necessary" for "access" to UNEs when, absent collocation, the new entrant would not be able to provide some services or to serve some customers by making use of a feature or functionality of an element it obtains from the incumbent.

Similarly, SBC cannot dispute that the statute expressly provides that incumbents must provide "interconnection" that is equal in quality to what the incumbent provides to itself. *See* SBC Reply at 7; 47 U.S.C. § 251(c)(2)(C). This statutory requirement of equal-in-quality interconnection cannot be divorced from the collocation provision. Thus, collocation is "necessary" for interconnection when, absent collocation, the new entrant would not be able to achieve interconnection that enables it to provide service that is equal in quality to what the incumbent provides to itself or to its customers.

"Just, Reasonable, and Nondiscriminatory" Terms. SBC also misreads Section 251(c)(6)'s requirement that incumbents permit collocation on terms and conditions that are "just, reasonable, and nondiscriminatory." SBC at 11-12. As AT&T showed, where equipment has functionalities and capabilities that are necessary for interconnection or access to unbundled network elements, it would be an unreasonable and discriminatory term and condition to deny the collocator the ability to make use of *additional* telecommunications functionalities in that equipment so long as the additional functions do not consume any appreciable additional space. SBC's only response is to claim that the "terms and conditions" language comes into play only after it has been determined whether the equipment is "necessary." SBC Reply at 11. That may be true but, in the context of multifunction equipment, it is irrelevant. By definition, the equipment at issue performs functions that are concededly "necessary" for interconnection or access to UNEs, and therefore the equipment may unquestionably be collocated. The question then is on what terms and conditions must the incumbent permit the collocator to use that equipment. Denying the collocator the ability to use other telecommunications functions that are integrated within the overall operations of that equipment would be patently unjust, unreasonable, and discriminatory. This reading of Section 251(c)(6)'s prohibition on unreasonable and discriminatory terms is consistent with a long line cases holding that "statutory proscriptions against 'undue' or 'unreasonable' discrimination [like those in Section 251(c)(6)] comprehend *every* form of unreasonable discrimination within the power of Congress to

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extensions to the height of the ladder – *i.e.*, further costs savings – are irrelevant. At some point, however, without a height extension, one cannot reach the bulb at all. In that sense, the "necessary" analysis properly turns entirely on cost savings and efficiency gains.

condemn." *See, e.g., Merchants Warehouse Co.* v. *United States*, 283 U.S. 501, 512 (1931); *Louisville & Nashville R.R. Co.* v. *United States*, 282 U.S. 740, 749-50 (1931).[3]

As AT&T has explained, such a reading of Section 251(c)(6) is entirely appropriate because, where the additional functions make no additional *space* demands, the incumbent has no legitimate concern under the takings clause – which is the reason for Section 251(c)(6) in the first place. AT&T Comments at 17-19; AT&T Reply at 20-26. And in fact, SBC's struggle to concoct a takings concern falls flat. *See* SBC Reply at 12-13. SBC argues that the additional functions work a taking because "[t]he equipment still 'effectively destroys' the incumbent's right to possess, use, and dispose of the property as it sees fit," citing *Loretto* v. *Teleprompter Manhattan CATV Corp.*, 458 U.S. 419, 420 (1982). But the destruction of the incumbent's right to use the property plainly does not stem from the additional functionalities but from the original collocation of the equipment itself. Indeed, as *Loretto* itself establishes, where the additional functions make no additional demands on space in the central office, the incumbent could not possibly claim that the inclusion of such functions threatens a new or incremental taking. Once the equipment has been collocated, to the extent that the incumbent has any residual interest in how the collocator operates the equipment, Congress has provided that the incumbent may impose terms and conditions on the use of that equipment, *but only if* those terms are "just, reasonable, and nondiscriminatory." Forcing collocators to disable functions in validly collocated equipment is patently unjust and discriminatory.

In that regard, the LECs also misread AT&T's comments as arguing for what they call an "equal access" standard – *i.e.*, if the incumbent is permitted to put a piece of equipment in its central office, then new entrants must also be allowed to collocate such equipment, to avoid "discrimination." In the LECs' view, such a standard would improperly permit CLECs to "recreate the central office" in their collocation space. But AT&T does not suggest that Section 251(c)(6) is that broad. Rather, as AT&T explained, Section 251(c)(6) prohibits the incumbent only from imposing unreasonable and discriminatory terms and conditions on collocation that do not implicate the incumbent's rights under the takings clause. Thus, a CLEC could collocate and use additional non-"necessary" functions only when they are integrated within equipment that performs "necessary" functions and consumes no appreciable additional space. Such a standard would preclude collocation of a broad range of equipment, including OS/DA, signaling system functionality, enhanced services, as well as the personnel and billing functions previously identified.

Specific Functionalities. With respect to specific functionalities, the LECs are surprisingly silent, and make almost no attempt to refute the extensive factual showings of AT&T and many others that transmission and switching and related surveillance functions are

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[3] SBC's claim (Reply at 11-12) that AT&T made this argument in the D.C. Circuit and that the D.C. Circuit rejected it is wrong on both counts. First, the pages in AT&T's appellate brief that SBC cites reveal that AT&T made the "terms and conditions" argument only with respect to cross-connects, not with respect to multi-function equipment. *See* SBC Reply at 12; AT&T Intervenor Brief at 13-14. Second, the Court did not address the terms and conditions argument at all – perhaps because the Commission had not relied on that argument in adopting the particular cross-connect rule in the order that was under review. *See GTE Service Corp.*, 205 F.3d at 423 (cited in SBC Reply at 12).

"necessary" for interconnection and access to unbundled network elements.[4] For example, SBC argues that packet switch functionality is not "necessary" for interconnection or access to unbundled network elements, but it rests its argument on purely legal grounds. SBC Reply at 14. SBC does *not* dispute (or even acknowledge) AT&T's showing that packet switching functions are inseparable from many transmission functions, and that the dramatic gains that collocated packet switching functions can produce in transmission efficiency would facilitate entry and the provision of services that would otherwise be precluded. AT&T Comments at 27-32; AT&T Reply at 30-33. SBC's silence on that score is tantamount to a concession.[5]

The LECs also attack collocation of circuit switching functions on purely legal grounds. They rely solely on the fact that the Commission has previously found that circuit switch functions are not "necessary" for interconnection or access to unbundled elements, and on their erroneous claim that AT&T's standard is a "naked plea in the name of efficiency." *See* SBC Reply at 15-16. The Commission, however, is entitled (if not obligated) to reassess whether it can require collocation of circuit switching functions under the interpretation of Section 251(c)(6) that it adopts on remand. In that regard, SBC simply ignores the showing of AT&T and others that collocation of circuit switching functions can in fact be "necessary," because the ability to collocate that functionality may determine whether a carrier can serve more rural and more heavily residential offices where calls between customers in the same wire center are more prevalent, because the alternative (establishing backhaul facilities) is prohibitively expensive. AT&T Reply at 33-34.

Indeed, circuit switching functions are clearly "necessary" to serve residential and rural customers through interconnection or access to unbundled network elements. Circuit switching equipment indisputably performs encoding, multiplexing and concentration functions that everyone concedes are "necessary" under the Act. In some circumstances collocation of circuit switching functions can so dramatically increase the efficiency of those transmission functions that it facilitates entry that would otherwise be precluded. The trunking requirements of a switch are, in general terms, a function of the intensity of line usage during the busy hour (since the network is engineered to the busy hour) and the proportion of calling originating from or terminating to a distant switch. For example, if 16.7 percent of the lines in a wire center are active in the busy hour (as would be assumed in a typical Line Unit concentration of 6:1), and 60 percent of those calls are interswitch calls, then there is a 10:1 ratio in that wire center between the number of loops and the number of interoffice trunks required to serve those loops. As this example suggests, however, collocation of switching functionality can substantially reduce a CLEC's need for interoffice facilities, and the resulting cost reductions become more and more dramatic the more the calling in that central office is between customers whose loops that terminate at the same location as the switch. In the example above, which describes a typical

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[4] In order to be able to maintain any type of collocated equipment, CLECs must be able to monitor the performance of such equipment remotely through the use of surveillance capabilities.

[5] SBC also does not address the fact that the Commission decision not to require the unbundling of packet switching – even though it met the impair test for residential and small business customers – was based on the assumption that CLECs would be permitted to collocate packet switching equipment. If CLECs cannot do so, the Commission must reverse its decision on the unbundling of packet switching.

residential central office, the transmission savings from collocating circuit switching would be tenfold. Under other common assumptions, the savings can be as high as *fiftyfold*. *See* Attachment (explaining these calculations in more detail).

As an economic matter, a CLEC would still prefer to collocate DLCs instead of circuit switching equipment under certain circumstances. DLCs provide a much smaller minimum capacity than a switch, and therefore the average total unit cost for a DLC would be lower than for a switch until a certain threshold capacity is reached (generally between 1800 and 3600 lines). Thus, notwithstanding a switch's superior efficiencies, DLCs are more practical for locations where fewer lines are served. DLCs are also more economical in typical downtown business districts where the calling is largely interoffice and the intensity of line use is so great that line use concentrations lower than 4:1 are justified. *See* Attachment. Indeed, given the current prohibition on collocation of circuit switching, this is precisely the pattern of collocation that is occurring. Collocation of circuit switching equipment is "necessary" to offer facilities-based service using interconnection or unbundled elements beyond these market segments.

In addition, SBC also ignores the fact that there have been significant changes in the size of telecommunications equipment since 1996. As some commenters have shown, *see, e.g.*, Tachion at 2-4, circuit switching functions can now be integrated with transmission functions in relatively small equipment that fits within a standard collocation cage. Therefore, even if circuit switch equipment were not "necessary" under the Act, an incumbent's refusal to permit CLECs to use switching functions that are integrated with "necessary" functions in such small equipment would be an unjust, unreasonable, and discriminatory term and condition of collocation. In these and other similar circumstances (*see* AT&T Reply at 33-34), the Commission has ample authority to require collocation of circuit switching functions. In contrast, it should be noted that no party has suggested that a CLEC would collocate a full-blown switch of the size and scope deployed by the ILEC even if it used the same type of equipment. AT&T Reply at 34.

Cross-Connects. CLEC-provided cross-connects are also "necessary" for access to the unbundled loop when two facilities-based CLECs are sharing the loop to provide different services, as in line splitting. SBC's only response is that the Commission's *Line Sharing Order* applies only where the incumbent LEC is providing the voice service and the CLEC is providing the data service. SBC Reply at 25-26. But SBC is confusing line sharing with "line splitting," which occurs when two CLECs provide voice and data services over the same loop. The Commission expressly found in the *Texas 271 Order* that "[t]he Commission's rules require incumbent LECs to provide requesting carriers with access to unbundled loops in a manner that allows the requesting carrier 'to provide any telecommunications service that can be offered by means of that network element,'" and that "[a]s a result incumbent LECs have an obligation to permit competing carriers to engage in line splitting over the [unbundled loop] where the competing carrier purchases the entire loop and provides its own splitter." *Texas 271 Order* ¶ 325. Without the ability to establish cross-connects between two CLEC collocations, line splitting between two facilities-based CLECs would be infeasible. The only alternative would be to extend copper transmission facilities to a different location, which – aside from being prohibitively expensive (*see* AT&T Comments at 21-22) – would as a technical matter eliminate

the ability to offer data services over that line. SBC has provided no evidence to refute AT&T's factual showing on that score.[6]

Even if CLEC cross-connects were not "necessary" for access to unbundled network elements under Section 251(c)(6), Sections 251(b)(4) and 224 independently require the LECs to grant CLECs access to any "duct, conduit, or right-of-way" within the central office for such cross-connects. As the Commission recently held, the plain language of Section 224(f)(1), which requires "non-discriminatory access to any pole, duct, conduit, or right-of-way owned or controlled" by a utility, "encompass[es] in-building facilities . . . that are owned or controlled by a utility." *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996,* First Report and Order and Further Notice of Proposed Rulemaking in WT Docket No. 99-217, Fifth Report and Order and Memorandum Opinion and Order in CC Docket No. 96-98, and Fourth Report and Order and Memorandum Opinion and Orderin CC Docket No. 88-57, 2000 WL 1593327 ¶ 80 (rel. October 25, 2000) (*"Building Access Order"*). Specifically, the Commission concluded that "'rights-of-way' within buildings means, at a minimum, *defined pathways* that are being used or have been specifically identified for use as part of a utility's transmission and distribution network." *Id.* ¶ 82 (emphasis added). The rights-of-way that exist within a central office and that CLECs would use to deploy cross-connects easily fit within this definition. Indeed, to deploy a cross-connect, CLECs typically use well-defined and pre-existing cable racks, floor penetrations, and other "defined pathways" in the central office that are already part of the incumbent's "transmission and distribution network." Section 224(f) unambiguously gives CLECs access to those "defined pathways" for cross-connects.[7]

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In sum, the LECs' claims are meritless. The FCC has ample authority to adopt AT&T's proposed standard for collocation under Section 251(c)(6), and to promulgate rules establishing a rebuttable presumption that incumbents must permit CLECs to collocate transmission and switching functionalities.

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[6] Similarly, CLEC cross-connects are a just and reasonable term and condition of collocation. SBC does not dispute the merits of that claim, but asserts that this argument was raised and rejected by the D.C. Circuit. SBC Reply at 25. Although AT&T did raise the discriminatory term argument in its brief as a possible grounds to support the cross-connect requirement, the Commission had not relied on (or even mentioned) that argument when it provided for CLEC cross-connects in the order under review. The Court found that CLEC-provided cross-connects are not "necessary" under Section 251(c)(6), but it did not address (or even refer to) the term and condition argument, presumably because the FCC had not relied on it. Thus the Commission is not precluded from finding on remand that CLEC cross-connects are a nondiscriminatory term and condition of collocation.

[7] For similar reasons, the LECs' claims that cross-connects would be unworkable in practice are incorrect. CLEC cross-connects, when not in abutting cages, would be placed in established "pathways" in the central office (such as cable racks and floor penetrations), usually with the lines of the incumbent. There is no practical reason why the incumbent could not maintain and track the location of CLEC cross-connects, as it maintains and tracks its own lines, in a manner that would not undermine its administration of the central office. *See also* AT&T Reply at 37-38 (discussing cross-connect practices in "collocation hotels").

ATTACHMENT

COLLOCATION OF CIRCUIT SWITCHING

In very general terms, trunk requirements of a circuit switch are driven by two considerations: the intensity of line usage during the busy hour and the proportion of calling that originates from or terminates to a distant switch. Engineering choice of the Line Unit concentration, or the number of lines in a module than can simultaneously place/receive calls, is a proxy for the intensity of line usage in an office. Typically, concentration will range from a ratio of 4:1 (or possibly lower) in offices with heavy customer calling per line in the busy hour to 10:1 in offices with relatively light usage per line. Knowing the line concentration gives an approximation of the probability that a call will be originated at any instant in time during the busy hour (That is, if the concentration ratio is 6:1, one sixth of the lines may be active at one time. It is reasonable to assume that this is the average level of activity in the office/switch busy hour. Accordingly (with a concentration ratio of 6:1), 16.7% of the line may be making or receiving a call at any instance in the busy hour).

The next relevant question is how many trunks are required to serve the lines. That question is addressed by knowing both the number of lines active in the busy hour and amount of usage that is interswitch. A reasonable approximation is that 60% of calling in a residential central office is interswitch. This means 6 out of 10 active lines are connected to an interoffice facility. Given that 16.7% of the lines are active in the busy hour and 60% of the calls are interswitch, then 10% of the total lines terminated on the switch will require an interswitch trunk in the busy hour (16.7% lines active * 60% interswitch calling). This means one interoffice facility, on average, is required for every 10 subscriber loops.

Obviously, there is a range over which both the concentration ratio of the line units and the interswitch calling rate can be expected to vary. The table below illustrates the relationship between these two factors and the loop-to-interoffice facility ratio:

Loops Provisioned Per Interoffice Facility							
line unit	**percent of calling originating from/terminating to another switch**						
concentration	**20%**	**30%**	**40%**	**50%**	**60%**	**70%**	**80%**
10:1	**50.0**	**33.3**	**25.0**	**20.0**	**16.7**	**14.3**	**12.5**
8:1	**40.0**	**26.7**	**20.0**	**16.0**	**13.3**	**11.4**	**10.0**
6:1	**30.0**	**20.0**	**15.0**	**12.0**	**10.0**	**8.6**	**7.5**
4:1	**20.0**	**13.3**	**10.0**	**8.0**	**6.7**	**5.7**	**5.0**

What is apparent from the preceding table is that switching can substantially reduce the need for interoffice facilities, particularly when the calling is largely between customer loops that terminate at the same location as the switch. In the case of a typical residential central office as described above the transmission cost savings are tenfold, i.e, for every switch port collocated in a cental office, a carrier can save the cost of nine DS0 interoffice transmission facilities.

Given that these economies are substantially greater than that afforded by DLC (which generally provide a 4:1 improvement), then the question arises: why would a CLEC install a DLC rather than switching? The decision is driven by two considerations – regulatory constraints on collocation of switching and the unit cost trade-off of DLC+transport versus switching+transport.

From a practical standpoint, a prohibition on collocation of circuit switching renders moot the question of whether a DLC or a switch is more economical. Nevertheless, the economic considerations are relatively simple – a DLC provides much smaller minimum capacity than does a switch. Thus, the average total unit cost for a DLC is lower than the unit cost for switching until a threshold capacity is surpassed. Thus, DLCs are practical for locations that serve relatively few lines. Based on FCC cost model figures for the DLC and RSM, it appears a DLC has a lower unit cost below about 1800 lines per site and an RSM has lower unit cost above 3600 lines per site. In the range of 1800 to 3600 lines, the tradeoff will be highly dependent on potential transport savings. Where the transport savings are small per facility, the economics of the DLC are more favorable. Given the preceding, considering that a CLEC can expect low line shares in each office and will likely be targeting business customers (that generate primarily interoffice calls and have an intensity of use that dictates line concentrations of 4:1 (or less)), one would expect to see primarily DLC deployment. Indeed, this is precisely the pattern of collocation that observed in the marketplace.